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USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

helping people help the land

LAKE TAHOE SOIL SURVEY

Project managers can now make decisions to improve the quality of BMP retrofit plans by dividing properties into five categories:

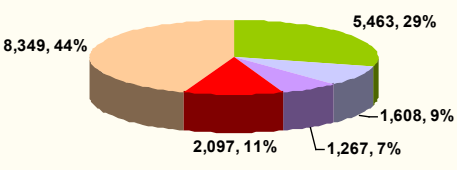
1) 29% of the properties have soils where permeability is so rapid that designs are not necessary. These properties are simply provided a do-it-yourself packet due to the non-technical nature of the BMPs.

2) 11% of the properties have soils where permeability is so slow that infiltration BMP's are not practical due to economic and/or technical constraints. These properties require large ground-disturbing excavations and have been set aside. They show potential for a regional storm water treatment approach.

3) 9% of the properties have a seasonal water table, which is so high that other ordinances prevent the installation of infiltration BMPs. These have been set aside and show potential for a regional storm water treatment approach.

4) 7% of the properties are too rocky or are shallow to bedrock. These properties are limited by the ability to excavate and require a site visit to determine their suitability for infiltration systems.

5) 44% of the properties do not exhibit any limiting factors. These properties have become the focus of staff time and resources as they're expected to require significant staff involvement for BMP design. This has reduced the number of properties requiring staff time by 56%.



Lake Tahoe Basin analysis of residential parcels with no BMP retrofit plan, by Geographic Information System category

Lake Tahoe is losing its world famous clarity because of sediment and phosphorus runoff from urban areas.

Lake Tahoe, considered to be one of the most beautiful Lakes in the United States, is having some beauty issues.

Over the years, population growth and development on this erosion-prone landscape have caused runoff, in the form of fine sediment and unwanted nutrients, into the lake. The once clear and pristine Lake Tahoe is currently losing its clarity at a rate of approximately one foot per year.

In an attempt to clear up the problem and stem the degradation, the Tahoe Regional Planning Agency passed an ordinance in 1992 requiring all property owners to collect storm water originating on their property.

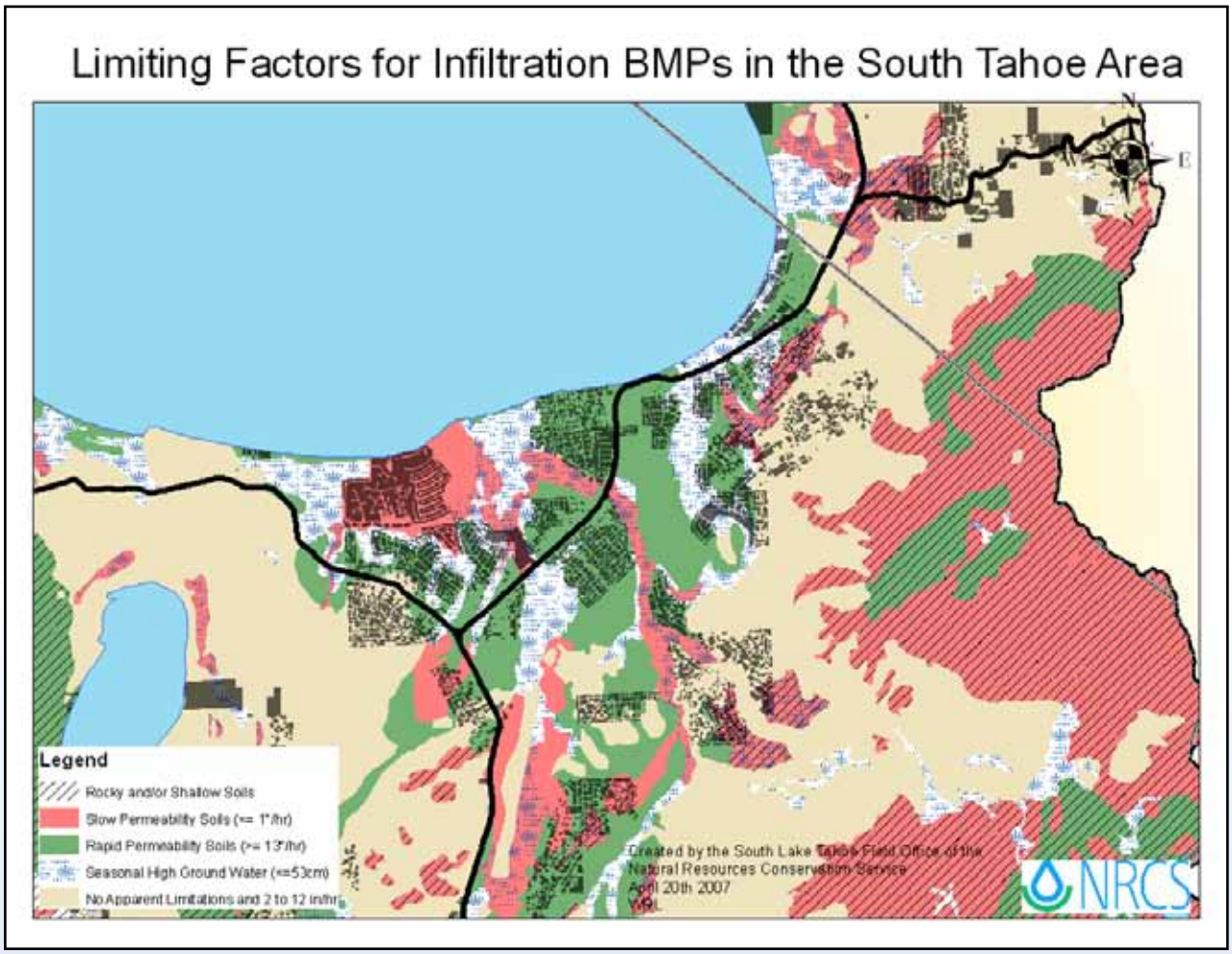
This requirement meant that approximately 30,000 single family residential properties would need to be retrofitted with Best Management Practices (BMPs). The BMPs include infiltration structures and treating the land for erosion control.

For several years, the **Natural Resources Conservation Service** (NRCS), in partnership with the Tahoe Resource Conservation District and the Nevada Tahoe Conservation District, have been providing conservation assistance to property owners. This approach has resulted in assistance to approximately 1,500 properties annually and approximately 600 completed projects per field season.

With 19,000 single family residences still in need of help, NRCS is contributing its expertise to a multidisciplinary team of conservationists and engineers. As an expert in the field of soils and soil survey mapping, NRCS Soil Scientist **Woody Loftis** was able to utilize the recently published edition of *The Soil Survey of Tahoe Basin Area, California and Nevada*.

This document, rich in soils information, has proven to be an extremely valuable tool to the team's planning efforts. By using the very extensive and detailed soil survey data, the team established an evaluation process that envisioned a triage approach to parcel analysis.

THE NATURAL RESOURCES CONSERVATION SERVICE IS AN EQUAL OPPORTUNITY EMPLOYER AND PROVIDER



This map illustrates the application of Geographic Information System analysis to residential areas in South Lake Tahoe.

This analysis provided a breakdown of soil limitations, which guided project managers in determining how to allocate their limited staffing resources more effectively.

The final result was an area-wide approach to applying technical assistance.

The soil survey data, in correlation with Geographic Iinformation System (GIS), showed problem areas and areas of opportunity, which enabled NRCS and partners to focus their efforts on appropriate sites.

This ultimately increased the number of BMP retrofit plans that could be done in a year. It also minimized collateral damage to the environment as a result of wholesale excavations for infiltration systems in marginal locations.

NRCS has not only increased its efficiency by empowering a significant percentage of homeowners to accomplish the task with minimal staff effort but has also improved the services to landowners.

Furthermore, those that are situated on sites with severe soil limitations are given a temporary reprieve until new technology or regional storm water treatment resources become available.

Molly Pulsifer of the Tahoe Resource Conservation District measures impervious areas to develop a BMP retrofit plan to assist Lake Tahoe homeowners.